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(54) Title: EPITAXIAL METHODS AND TEMPLATES GROWN BY THE METHODS

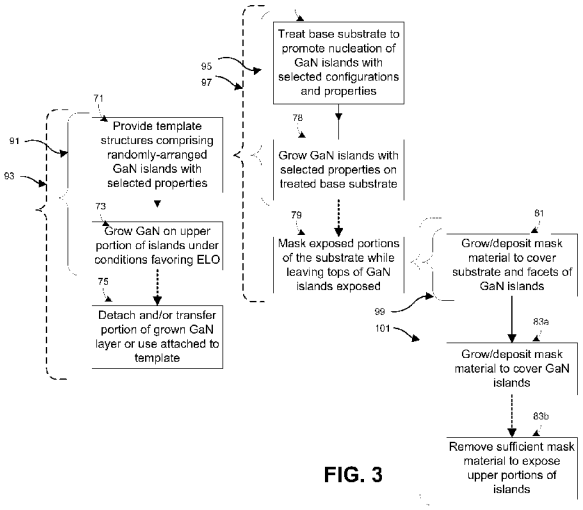


FIG. 3

(57) Abstract: This invention provides methods for fabricating substantially continuous layers of a group III nitride semiconductor material having low defect densities and optionally having a selected crystal polarity. The methods include epitaxial growth nucleating and/or seeding on the upper portions of a plurality of pillars/islands of a group III nitride material that are irregularly arranged on a template structure. The upper portions of the islands have low defect densities and optionally have a selected crystal polarity. The invention also includes template structures having a substantially continuous layer of a masking material through which emerge upper portions of the pillars/islands. The invention can be applied to a wide range of elemental and compound semiconductor materials.

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